

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

Claim 25 (currently amended): On a weapon having a structure including components that engage in dynamic activity upon said weapon being operated and being of the type adapted to carry a load of ammunition, and following an automatic activity cycle of a duration typical to said weapon, discharge a round, and following a cycle, automatically successively reload a next round of ammunition from said load or remain in a hold open position when the discharged round was the last one from said load,

~~a battery-powered microprocessor based assembly or the like, in combination with piezoelectric transducer means, including a power source and provisions to store and run at least one program and to detect and track the depletion process of a load of ammunition, wherein: programs, and being enabled at least, to track weapon activity occurring within the typical duration of said weapon automatic cycles of operation, in combination with~~

~~said piezoelectric transducer means is adapted and adequately coupled to said weapon, as to generate electrical impulses substantially resulting from induced stresses, induced into said transducer means by the dynamic activity taking place upon said weapon being operated,~~

~~and in which, provisions are made as to selectively track and correlate in time, portions of said electrical impulses with portions of said weapon operation dynamic event sequence,~~

~~in which further provisions are made such that detected, tracked and correlated portions of electrical impulse sequences thusly generated, can be utilized to determine at least if said weapon was discharged and has automatically reloaded, or if it has only been discharged,~~

a piezoelectric detector, adequately adapted to said weapon as to generate electrical impulse sequences induced on said detector by dynamic events including structural shock, vibration, and abrupt changes in acceleration, substantially resulting from discharging a round and from chambering another,

in which provisions are made such that, upon said piezoelectric detector detecting activity on said weapon, said microprocessor executes activities conducive to determine at least if said weapon was only discharged, or if it discharged and successively reloaded,

by ascertaining if within the lapse of time substantially corresponding to the typical duration of an automatic cycle of operation on said weapon, and within the sequence of detected electrical impulses thusly generated, impulses reporting only a discharge, or impulses reporting a discharge, followed timely by others reporting the reloading of a new round were present,

and in which, further provisions are made such that, said microprocessor based assembly executes thereon activities for tracking count of the discharge of ammunition on said weapon, including further provisions for tracking load discharge counts and for resetting a load discharge count to default for restarting tracking a new load count upon identifying the discharge of a round with no following reload.

Claim 26 (currently amended): The assembly of claim 25 in which said assembly is adapted to be responsive and to become enabled from a lower power wait state upon said weapon being operated,
having further provisions to enable the automatic return of said assembly to said lower power wait state.

Claim 27 (cancelled)

Claim 28 (currently ammended): The assembly of claim 25 ~~in which said assembly contains at least one~~ comprising control means provisions.

Claim 29 (currently amended): The assembly of claim 28, in which further provisions are made, as to allow ~~programming of said assembly by the user by operating said control means.~~ modifying, selectively enabling, activating, recalling and altering presets, and still further resetting said assembly by utilizing a control means.

Claim 30 (currently amended): The assembly of claim 25 in combination with a switching device adapted to function as a moveable weapon component status detector and a control means.

Claim 31 (cancelled)

Claim 32 (currently amended): The assembly of claim 25 ~~in which said transducer means may include~~ including more than one transducer component piezoelectric detector working cooperatively in an electrically unified structure as to generate an electrically higher combined event report.

Claim 33 (currently amended): The assembly of claim 25 in which a weapon operation event detecting means capable of detecting dynamic events occurring on said weapon characterized by abrupt inclination is used.

Claim 34 (currently amended): The assembly of claim 25 ~~in which said assembly in combination with signal means provisions, including further~~ has provisions for activating said signal means. regarding ammunition load status.

Claim 35 (cancelled)

Claim 36 (currently amended): The assembly of claim ~~35~~ 34, in which said signal means is ~~conformed by a plurality of luminous colored light generators adapted to illuminate~~ is conformed by a visual display that displays a report following a pattern preset that is adapted to be indicative

~~in a relation to~~ of the status of said load of ammunition, ~~being depleted~~ being said visual signal means ~~adapted to~~ disposed on said weapon ~~as an accessory to said weapon~~ in such manner that it provides to the user with a substantially visible ~~report of the progressive~~ reports related at least, to the status ~~consumption~~ of said load of ammunition.

Claim 37 (currently amended): The assembly of claim 35 36, in which said signal means is built into a functional component ~~integral~~ of said weapon in such manner that it provides to the user with a substantially visible report ~~of the progressive consumption of~~ in relation to the status of said load of ammunition while also performing as the component it replaced.

Claim 38 (currently amended): The assembly of claim 36 in which said visual report indicating pattern preset is customizable. ~~a correlation between said signal means and the progressive consumption of said load of ammunition can be programmed by the user.~~

Claim 39 (previously presented): The assembly of claim 25 in which said assembly has non volatile data storage provisions.

Claim 40 (previously presented): The assembly of claim 25 in which said assembly has provisions for establishing and recording on said data storage provisions, a historical useage record including at least date and time information regarding said weapon discharge events.

Claim 41 (currently amended): The assembly of claim 39, in which provisions are made ~~as to~~ for embedding and retrieving of ~~embed and retrieve~~ user traceable information.

Claim 42 (previously presented): The assembly of claim 39 in which said assembly has access provisions to retrieve previously recorded data.

Claim 43 (previously presented): The assembly of claim 39 in which said data storage provisions include security limiting means for accessing said stored data.

Claim 44 (currently amended): The assembly of claim 25 ~~in which data communication provisions are made, as to allow programmability of the assembly.~~ including removably adapted data access and control provisions.

Claim 45 (currently amended): The assembly of claim 25 ~~in which the output of~~ including provisions to electrically modify said electrical impulse sequences generated by said piezoelectric detector. ~~transducer means is electrically modified.~~

Claim 46 (currently amended): The assembly of claim 45 having provisions enabling that said electrically modified electrical impulse sequences be subjected to cyclic routines intended to substantially eliminate the lower level electrical impulse portions contained within electrical impulse sequences generated by said piezoelectric detector. ~~which modification of said electrical impulses may include some level of signal conditioning.~~

Claim 47 (cancelled)

Claim 48 (previously presented): The assembly of claim 25 in which said detector is adapted with vibration dampening provisions.

Claim 49 (new): The assembly of claim 25 including tracking error management provisions of potentially detected spurious or anachronic events.

Claim 50 (new): The assembly of claim 25 including provisions for storing and utilizing electrical impulse threshold level identification means presets.

Claim 51 (new): The assembly of claim 25 including provisions for storing and utilizing weapon cycle and dynamic event timing presets.

Claim 52 (new): The assembly of claim 25 including provisions for storing and utilizing electrical impulse duration presets.

Claim 53 (new): The assembly of claim 25 including provisions for storing and utilizing presets for applying cyclic gating of the lower level portions of the electrical impulses detected within an electrical pulse sequence generated by an activity cycle of said weapon.

Claim 54 (new): The assembly of claim 25 including provisions for storing and utilizing presets for applying a level of synchronized cyclic neutralization to the lower level portions of the electrical impulses detected within an electrical pulse sequence generated by an activity cycle of said weapon.

Claim 55 (new): The assembly of claim 25 including provisions for storing, recalling and selectively enabling at least one preset related to at least one microprocessor electrical impulse identification related activity.

Claim 56 (new): The assembly of claim 25 including provisions to store and recall presets typical to more than one weapon.

Claim 57 (new): The assembly of claim 34 including further provisions for storing and selectively enable digitally managed energizing pattern presets for energizing said signal display.

Claim 58 (new): The assembly of claim 36 in which said visual display is luminous in nature.

Claim 59 (new): The assembly of claim 58 in which said visual display comprises at least one

LED device.

Claim 60 (new): The assembly of claim 60 utilizing multicolored LEDs enabled to display a plurality of colors.

Claim 61 (new): The assembly of claim 60 in which said visual display comprises a plurality of multicolor LED devices providing visual feedback to the user by becoming and remaining illuminated in an apparent steady state, whilst being energized utilizing a power saving illuminating pattern.

Claim 62 (new): The assembly of claim 25 including a power source switching means.

Claim 63 (new): The device of claim 25 in which provisions are made for indentifying said weapon is operating in automatic mode, by establishing that the frequency of the higher level electrical impulses detected, closely corresponds to said weapon automatic rate of fire.

Claim 64 (new): The assembly of claim 25 in which provisions are made to automatically reset a tracked count to default when chambering a new round manually.

Claim 65 (new): On a weapon, having a structure including components that engage in dynamic activity upon said weapon being operated, and being of the type adapted to carry a load of ammunition, and following an automatic activity cycle of a duration typical to said weapon, discharge a round and successively reload a next round of ammunition from said load or remain in a hold open position when the discharged round was the last one from said load,

a microprocessor based assembly or the like, including a power source and provisions to store and run programs, being enabled at least, to track weapon activity occurring within the typical duration of said weapon automatic cycles of operation, in combination with piezoelectric detecting means, adequately adapted to said weapon as to generate

electrical impulse sequences, induced on said detector, by dynamic events including structural shock, vibration, and abrupt changes in acceleration, substantially resulting from discharging a round and from chambering another,

in which provisions are made such that, upon said piezoelectric detecting means detects activity on said weapon, said microprocessor executes activities conducive to determine at least if said weapon was only discharged, or if it discharged and successively reloaded,

by ascertaining if within the lapse of time substantially corresponding to the typical duration of an automatic cycle of operation on said weapon, and within the sequence of detected electrical impulses thusly generated, impulses reporting only a discharge, or impulses reporting a discharge, followed timely by others reporting the reloading of a new round were present,

and in which, further provisions are made such that, said microprocessor based assembly executes thereon activities for tracking count of the discharge of ammunition on said weapon, including further provisions for tracking load discharge counts and for resetting a load discharge count to default for restarting tracking a new load count upon identifying the discharge of a round with no following reload.

Claim 66 (new): On a weapon, having a structure including components that engage in dynamic activity upon said weapon being operated, and being of the type adapted to carry a load of ammunition, and following an automatic activity cycle of a duration typical to said weapon, discharge a round and successively reload a next round of ammunition from said load or remain in a hold open position when the discharged round was the last one from said load,

a microprocessor based assembly or the like, including a power source and provisions to store and run programs, and being enabled at least, to track weapon activity occurring within the typical duration of said weapon automatic cycles of operation, in combination with

detecting means, adequately adapted to said weapon as to send electrical impulses to said microprocessor based assembly in substantial synchronicity with said weapon discharging a round and when chambering another,

and in which, further provisions are made such that, upon said detecting means sends

electrical impulses to said microprocessor based assembly, said microprocessor thereon tracks said electrical impulses and executes further activities conducive to determine at least if said weapon was only discharged, or if it discharged and successively reloaded,

by ascertaining if within the lapse of time substantially corresponding to the typical duration of an automatic cycle of operation on said weapon, and within the sequence of the received electrical impulses, impulses reporting only a discharge, or impulses reporting a discharge followed timely by others reporting the reloading of a new round were present,

and in which, further provisions are made such that, said microprocessor based assembly executes thereon activities for tracking count of the discharge of ammunition on said weapon, including further provisions for tracking load discharge counts and for resetting a load discharge count to default for restarting tracking a new load count upon identifying the discharge of a round with no following reload.